

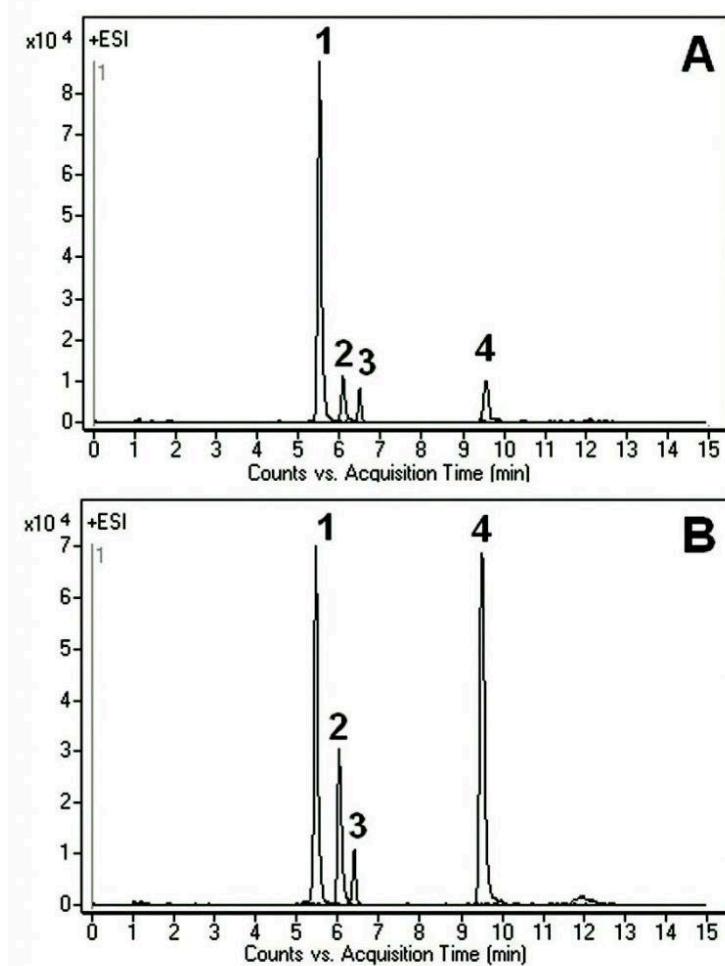


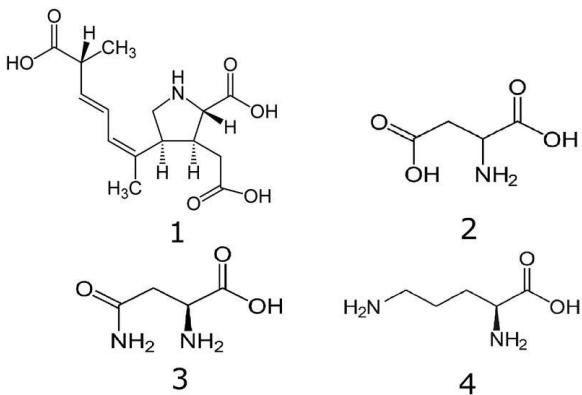
Domoic Acid Amino Acids and Ornithine Analyzed with LCMS - AppNote

LC-MS Analysis without Analyte Derivatization

The potent toxin, Domoic Acid is a highly polar compound which is poorly retained on most Reversed Phase Columns. In this Method , not only was Domoic Acid well Retained but also two isobaric compounds (L-Asparagine and Ornithine) were Retained and Separated. In addition, the Peak obtained for Aspartic Acid was very Symmetrical. From these chromatograms, it is clear that the two cell extracts show differences in the ratios between the analyzed compounds (Figure A vs. B).

The presented Method can be used in studies of cell extracts. In addition, it is Robust and Reproducible. The Column in this Method requires a very short Equilibration time between Gradient runs and the Method does not require pre-Column derivatization of any of the analytes.





Peaks:

1. Domoic Acid 312.1442 m/z (M+H)⁺
2. L-aspartic Acid 134.0453 m/z (M+H)⁺
3. L-asparagine 133.0608 m/z (M+H)⁺
4. Ornithine 133.0972 m/z (M+H)⁺

Method Conditions

Column: Cogent Diamond Hydride™, 4µm, 100Å

Catalog No.: [70000-15P-2](#)

Dimensions: 2.1 x 150mm

Mobile Phase:

A: 50% DI Water / 50% Methanol / 0.1% Formic Acid

B: Acetonitrile / 0.1% Formic Acid

Gradient:

Time (minutes)	%B
0	95
7	20
10	20
11	95

Post Time: 5 minutes

Injection vol.: 1µL

Flow rate: 0.4mL / minute

Detection: ESI – POS - Agilent 6210 MSD TOF Mass Spectrometer

Sample Preparation: Methanolic extracts of proprietary cell cultures A and B, isolated by filtration.

t₀: 0.9 minutes

Note: Domoic Acid, a compound known for some 30 years, was found to have neurological effects when ingested by humans. Upon ingestion, it causes diarrhea, dizziness, seizures, permanent loss of short-term memory and sometimes death.



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